

N O R T H   D A K O T A  
COOPERATIVE ECONOMIC INSECT REPORT

SUMMARY OF INSECT CONDITIONS--1975

December 5, 1975

Prepared by  
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North Dakota  
Department of Agriculture

Area Plan. & Dev.
FPU
Program Asst.
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Air Pollution
Impacts
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Insects
Diseases
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## NORTH DAKOTA

### COOPERATIVE ECONOMIC INSECT REPORT

Summary of Insect Conditions--1975

December 5, 1975

#### GRASSHOPPERS

Egg development as of May 16 showed up to 60% of the eggs in the southwest in the eyespot stage of development. Up to 14% of the eggs surveyed were nonviable at hatching time due to dessication (4%) and predators (10%). The first hatch of the season was observed May 23 in Richland County. A late, cold, wet spring resulted in a late main hatch which occurred around June 13. Below or near normal temperatures slowed hatching and retarded nymphal development during the month of June. By June 20 minimal damage occurred on rangeland and marginal areas of cropland in the southeast. Small grain crops were generally ahead of hopper development in most areas of the state and escaped major damage, although damage did occur in west central and southwest districts where the small grain was late in development. Some damage also occurred to rangeland and winter rye and winter wheat fields late in the season. The adult survey shows large increases in populations in the west central and northwest districts. Infestations decreased in the north central, southwest, south central and east central districts. Range surveys indicated about 197,560 acres economically infested in Billings; 64,000 in Dunn; 77,500 in Golden Valley; 284,200 in McKenzie and 13,800 in Slope County. Dominant cropland species were Melanoplus bivittatus, M. differentialis, M. sanguinipes, M. packardii and M. femurrubrum.

INSECTS AFFECTING CORN

EUROPEAN CORN BORER (Ostrinia nubilalis): Winter mortality averaged 22% in untilled corn fields in Cass, Dickey, Ransom, Richland and Sargent Counties. The fall infestation survey showed an increase in the same counties from 15 borers per 100 plants in 1974 to 34 borers per 100 plants in 1975. Percent plants infested also increased from 24% in 1974 to 56% in 1975.

WESTERN CORN ROOTWORM (Diabrotica virgifera): Adult populations averaged less than 1 in fields surveyed (early September) in Dickey, Ransom, Richland and Sargent Counties, while no adults were found per plants examined in LaMoure County. Twenty-four percent of the fields in Cass, Dickey, Ransom, Richland and Sargent Counties showed lodged or goosenecked plants due to rootworm damage during mid October. Foster and Stutsman County were found infested during 1975.

NORTHERN CORN ROOTWORM (Diabrotica longicornis): Adults were collected in Sargent County for a new distribution record during 1975.

SOUTHERN CORN ROOTWORM (Diabrotica undecimpunctata howardi): Single adult collected in corn in Stutsman County for a new distribution record.

INSECTS AFFECTING SMALL GRAINS

WHEAT STEM SAWFLY (Cephus cinctus): The annual survey of hard red spring wheat stubble fields for cutting by the wheat stem sawfly showed a decrease in cutting this year. Cut stems ranged up to 15.9 (averaged .51) percent compared to 1.2 percent found in 1974. Cutting was evident in 36 percent of the fields surveyed compared to 58 percent in 1974.

ARMYWORM (Pseudaletia unipuncta): Economic infestations occurred primarily in eastern North Dakota in barley, durum and hard red spring wheat fields

with infestations ranging up to 23 per square foot by the end of July. Damage occurred in the form of head clipping, leaf feeding and stem cutting. Control measures were applied.

ASTER LEAFHOPPER (Macrosteles fascifrons): Spring migrants were evident in the state by May 16 in Golden Valley County at the rate of 24 per 100 sweeps on winter wheat. Migrants were found in Bottineau County by May 30. By June 6 populations ranged from 15 up to 33 per 100 sweeps in Golden Valley, Grant, Morton, Stark and Stutsman Counties. Spring migrants ranged from 40-200 per 100 sweeps in rye and winter wheat in Grant, Adams and Bowman Counties by June 13. In Adams County spring migrants occurred also on two inch high flax at the rate of 1 per linear foot of row. Populations had increased to 250 per 100 sweeps in McKenzie County in wheat by June 27. Adults and nymphs ranging up to 560 (averaged 350) per 100 sweeps had occurred on oats in Emmons County the first week in July.

BARLEY THRIPS (Limothrips denticornis): By June 13 adults averaged 500 per 100 sweeps in rye in Sargent County. Migrating adults evident in Dickey and Eddy County by June 20 ranging from 150-200 per 100 sweeps.

WHITE GRUB (Phyllophaga spp.): Damage occurred to corn and wheat in southeastern North Dakota in early June. Controls were applied in localized areas of the counties.

WHEAT STEM MAGGOT (Meromyza americana): Up to 10% damage evident in wheat fields in eastern part of the state.

INSECTS AFFECTING TURF, PASTURES, RANGELAND

SOD WEBWORM (Crambus spp.): Moth flights first observed in Burleigh County on August 29. Adults observed in Sioux County by September 5.

WHITE GRUB (Phyllophaga spp.): By May 16 heavy larval infestations damaging pasture in McHenry County. Infested homeowners lawns in Dickey County by August 8.

INSECTS AFFECTING FORAGE LEGUMES

ALFALFA WEEVIL (Hypera postica): Populations were down this year in irrigated alfalfa in McKenzie County averaging 132 per 100 sweeps on June 27. By July 11 larval infestations in irrigated second cutting alfalfa in McKenzie and Williams County averaged 158 per 100 sweeps. Adults were collected in Dickey, LaMoure and Ransom Counties for new distribution records.

SPOTTED ALFALFA APHID (Therioaphis maculata): First occurrence of the season by June 13 in alfalfa in Sargent County. Infestations remained noneconomic throughout the season. Adams, Benson, Billings, Bottineau, Burke, Cavalier, Eddy, Emmons, Golden Valley, Grand Forks, Grant, Hettinger, Logan, McIntosh, Mercer, Morton, Nelson, Oliver, Pembina, Ramsey, Renville, Rolette, Sioux, Slope, Stark, Towner, Traill and Walsh Counties are new distribution records for the state.

SOUTHERN CORN ROOTWORM (Diabrotica undecimpunctata howardi): Adults were collected in Billings, Burleigh, Dunn, Grant, Griggs, Logan, McIntosh, Mercer, Slope, Sioux, Stark and Traill Counties for new distribution records during 1975.

ASH GRAY BLISTER BEETLE (Epicauta fabricii): Infestation averaged 40 per 100 sweeps in alfalfa in McKenzie County.

PEA APHID (Acyrtosiphon pisum): Infestations ranged from 10-250 (averaged 75) per 100 sweeps in Morton and Sioux Counties.



ALFALFA PLANT BUG (Adelphocoris lineolatus): Infestations ranged from 10-100 (averaged 60) per 100 sweeps in Grant, Morton and Sioux Counties on July 18. By August 22 infestations ranged up to 5,000 per 100 sweeps in second cutting alfalfa averaging 3,500 per 100 sweeps in Traill and Griggs Counties.

#### INSECTS AFFECTING SUGAR BEETS

SUGARBEET ROOT MAGGOT (Tetanops myopaeformis): Adult activity first recorded in traps in Walsh and Pembina Counties on June 2. Adult activity noted in Cass County the week of May 28-June 2 and a trace of adult flies showed up in McKenzie County by June 6. Peak adult emergence occurred in Walsh and Pembina Counties on June 16.

By July 4 wilted plants were evident in Pembina County on untreated beets.

A FLEA BEETLE (species undetermined): Five percent of leaf surface damaged in Walsh County by June 6. Damage also occurred in McKenzie, Pembina and Richland Counties.

WHITE GRUB (Phyllophaga sp.): Light damage evident in Richland County week of June 2-6.

#### INSECTS AFFECTING SUNFLOWERS

SUNFLOWER BEETLE (Zygogramma exclamationis): Adults active in sunflowers by June 6. By June 20 leaf feeding had occurred in Dickey, Eddy, Foster and Griggs Counties. Larvae evident in most fields surveyed in Barnes, LaMoure, Steele and Sargent Counties ranging up to 7 per infested plant. By July 18 larvae present in most fields surveyed in Eddy, Foster and Griggs Counties ranging up to eight per infested plant. During the first week in August larvae were causing light damage to sunflowers in Walsh County.

SUNFLOWER MAGGOT (Strauzia spp.): Larval damage evident in Griggs and Steele Counties by mid July. By August 22 a single field in Steele County had up to 10% damage (stalk breakage).

SUNFLOWER MOTH (Homeosoma electellum): During the first week of August larvae ranging in size from 1/2 to 3/4 inch ranging up to 50 per head caused extensive damage to sunflowers in Dickey, Eddy, Foster, Griggs, LaMoure, Sargent and Steele Counties. Damage was also evident in Barnes, Nelson, eastern Ramsey, Ransom, Richland, Stutsman and western Walsh Counties. Early planted sunflowers (those planted prior to May 20) were hit the hardest. By August 22 larval infestations ranged from a trace up to 100% of the plants infested in fields in Cass, Grand Forks, Griggs, Steele, Traill and Walsh Counties. By September 12 larvae were causing light damage to sunflowers in Grant County. By October 15 partial second generation larvae were found in infested fields in Richland County. Controls were applied in up to 45% of the fields infested in these counties.

A WEEVIL (Haplorhynchites seneus): Moderate damage of head clipping in sunflowers in Pembina County by August 22.

WHITE GRUBS (Phyllophaga spp.): Moderate to heavy damage occurred to sunflowers in Dickey County by June 20.

#### MISCELLANEOUS FIELD CROPS

A FLEA BEETLE (species undetermined): Populations averaging 240 per 100 sweeps had occurred on tame mustard by June 13 in Cavalier County. Up to 1,000 acres had been sprayed by this date. Weather conditions (cool, rain) reduced populations substantially after this date. By June 20 extensive damage had been reported on localized fields of tame mustard in Dickey County.

INSECTS AFFECTING FOREST AND SHADE TREES

SPRING CANKERWORM (Paleacrita vernata): Female moths emerged in Cass County on April 6. Larvae were defoliating trees in Burleigh County by May 23. Larvae 3/4 to 1 inch caused localized heavy defoliation in Pembina County by June 13.

ASH BORER (Podosesia syringae fraxini): Infested trees in Bowman County with up to two larvae per tree. Borer larvae were starting to pupate by May 12.

SMALLER EUROPEAN ELM BARK BEETLE (Scolytus multistriatus): Adults collected from multilure pheromone sticky board traps furnished by the U. S. Forest Service are a new state record for North Dakota. Adults collected in Cass County by June 27 and Burleigh and Morton County by September 5.

FOREST TENT CATERPILLAR (Malacosoma disstria): By June 27 light defoliation was occurring in the Fort Totten area of Benson County. By July 11 larvae were pupating. Severe localized feeding had occurred on basswood, elm and oak.

ASH PLANT BUG (Neoborus amoenus): Moderate to heavy infestations occurred on green ash in Cass County the first week in June. By June 13 nymphs at the rate of 3 per leaf occurred on green ash in Bowman County.

BOXELDER APHID (Periphyllus negundinis): By June 13 heavy infestations of 30-40 per leaf on boxelder.

WOOLY ELM APHID (Eriosoma americanum): Up to 30 per leaf infested American elm in Burleigh and Morton County on June 13. Localized heavy infestations occurred in these counties.



WESTERN PINE TIP MOTH (Rhyacionia bushnelli): New county distribution records were recorded for Burleigh and Mercer Counties.

STRIPED ALDER SAWFLY (Hemichroa crocea): Moderate defoliation of birch occurred in the Turtle Mountains located in Bottineau and Rolette County.

SANDCHERRY WEEVIL (Coccotorus hirsutus): New county distribution record for Bottineau County.

FALL CANKERWORM (Alsophila pometaria): During week of June 13 localized heavy defoliation occurred in Pembina County. Adults detected in Cass County on October 18 and 19.

ELM SAWFLY (Cimbex americana): Larva were causing light defoliation to elms in Grant County during early August.

#### INSECTS AFFECTING MAN AND ANIMALS

CATTLE GRUBS (Hypoderma spp.): Infestations ranged from 1-45 (averaged 5.4) grubs per animal on 12% of the animals examined at Dickinson, Mandan, Minot, Rugby and Turtle Lake livestock auctions March 10 through April 3, 1975. Adults were running cattle in Sioux and Adams Counties by June 13. By June 27 adults were running cattle in Dunn, Mercer and McKenzie Counties.

SHORTNOSED CATTLE LOUSE (Haematopinus eurysternus) and CATTLE BITING LOUSE (Bovicola bovis): Ten untreated animals examined March 10 and 24 in a single herd in Ransom County averaged 31 lice per inch hair part per animal. Twenty treated animals in two separate herds indicated 0 readings on all 20 of the recorded animals with the exception of one animal which had 1 louse.

HORN FLY (Haematobia irritans): Five per animal occurred on range cattle in Billings County with 15 per animal showing up in Golden Valley County by

June 6. Populations ranged from 100-500 (averaged 400) per animal on beef cattle in McKenzie County by July 3.


A BLACK FLY (Simulium occidentale): Populations ranging from 30 to 40 per ear occurred on horses in Burleigh County by May 23.

A BLACK FLY (Genus Simulium, Species undetermined); During the week of May 26-30 heavy populations were causing annoyance to homeowners in Fargo, Cass County.

THROAT BOT FLY (Gasterophilus nasalis): Adults were still active on horses by October 4.

HORSE BOT FLY (Gasterophilus intestinalis): Adults were still active and laying eggs in Burleigh County by September 26. Three horses found infested with four to five thousand eggs per animal.

MOSQUITOES: High populations of mosquitoes caused annoyance to man and animals in eastern and southeastern North Dakota due to the heavy rainfall which occurred the last week of June which caused extensive flooding throughout the Red River Valley. As of July 11, 5% of the total trap counts in the Fargo area yielded Culex tarsalis. By July 20 several CDC battery operated light traps were showing counts of 15-20,000 mosquitoes of which 90-96% were Culex tarsalis.

  
Calvin G. Scholl  
Survey Entomologist  
North Dakota  
Department of Agriculture



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Agrotis ipsilon  
 (black cutworm)  
Amathes c-nigrum  
 (spotted cutworm)  
Anagrapha falcifera  
 (celery looper)  
Ceramica picta  
 (zebra caterpillar)  
Crambus spp.  
 (sod webworm)  
Crymodes devastator  
 (glassy cutworm)  
Euxoa auxiliaris  
 (army cutworm)  
Euxoa divergens  
 (divergent cutworm)  
Euxoa messoria  
 (darksided cutworm)  
Loxostege commixtalis  
 (alfalfa webworm)  
Loxostege sticticalis  
 (beet webworm)  
Nephelodes minians  
 (bronzed cutworm)  
Ostrinia nubilalis  
 (European corn borer)  
Peridroma saucia  
 (variegated cutworm)  
Pseudaletia unipuncta  
 (armyworm)  
Scotogramma trifolii  
 (clover cutworm)  
Trichoplusia ni  
 (cabbage looper)

MEDORA (continued)												
7/8	-	-	4	-	-	-	-	-	-	-	15	-
7/13	-	-	-	-	-	-	-	-	-	30	-	-
7/15	-	-	-	-	-	-	-	-	-	45	-	-
7/18	-	1	-	-	-	-	-	-	-	-	-	-
7/22	-	-	1	-	-	-	-	-	-	-	-	-
7/24	-	-	-	-	-	-	-	-	-	1	-	-
7/28	-	-	-	-	-	-	-	-	-	-	-	-
7/29	-	-	3	-	-	-	-	-	-	1	-	-
8/12	1	-	1	-	-	-	-	-	-	2	-	-
8/18	-	-	-	-	-	-	-	-	-	-	-	-
8/19	-	-	1	-	-	-	-	-	-	1	-	-
8/27	-	-	-	-	-	-	-	-	-	2	-	-
8/28	-	-	1	-	-	-	-	-	-	3	-	-
9/6	-	-	3	-	-	-	-	-	-	-	-	-
9/8	-	-	1	-	-	-	-	-	-	-	-	-
MOUNTAIN												
6/3	-	-	3	-	-	-	-	-	-	-	-	-
6/12	-	-	1	-	-	-	-	-	-	-	-	-
6/18-19	-	-	-	-	-	-	-	-	-	-	-	-
6/22	-	-	4	-	-	-	-	-	-	-	-	-
6/24	-	-	3	-	-	-	-	-	-	-	-	-
7/14	-	-	2	-	-	-	-	-	-	-	-	-
7/17	-	-	3	-	-	-	-	-	-	-	-	-
7/21	-	-	3	-	-	-	-	-	-	-	-	-
7/25	-	-	1	-	-	-	-	-	-	-	-	-
7/28	-	-	3	-	-	-	-	-	-	-	-	-
8/4	-	-	-	-	-	-	-	-	-	-	-	-
8/6	-	-	-	-	-	-	-	-	-	-	-	-
8/12	-	-	1	-	-	-	-	-	-	-	-	-
8/14	-	-	-	-	-	-	-	-	-	-	-	-
8/26	-	-	5	-	-	-	-	-	-	-	-	-
8/28	-	-	1	-	-	-	-	-	-	-	-	-
9/6	1	-	3	-	-	-	-	-	-	3	-	-
9/9	-	-	1	-	-	-	-	-	-	-	-	-

Black Light Trap Collectors Acknowledged:

Hollis Dietz--Medora  
 Bruce Hanson--Jamestown  
 Jean Kotchman--Cavalier  
 Barbara Lago--Fargo  
 John Schneider--Bismarck  
 Jack Stein--Bottineau

All collections were determined by Barbara Lago.



NORTH DAKOTA  
COOPERATIVE ECONOMIC INSECT REPORT

SUMMARY OF CUTTING BY THE WHEAT STEM SAWFLY  
1966 - 1975 SURVEY DATA

County	<u>Percent Cut Stems</u>										<u>Average</u>
	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	
Adams	.3	1.3	.7	.9	-	-	-	-	-	-	.8
Billings	.2	.7	1.3	.5	.03	0	-	-	-	-	.5
Bowman	.2	1.3	.4	.1	-	-	-	-	-	-	.5
Burke	.9	5.2	1.2	.6	-	-	-	-	-	-	2.0
Burleigh	-	-	-	.3	.9	.6	-	-	-	-	.6
Divide	5.3	9.3	3.7	.2	.2	.8	1.9	2.2	2.7	.1	2.6
Dunn	0	.5	.7	0	-	-	-	-	-	-	.2
Emmons	-	-	-	.1	-	-	-	-	-	-	.1
Golden Valley	3.2	1.1	1.5	.5	.2	.08	-	.1	.1	.4	.8
Grant	-	-	-	.03	-	-	-	-	-	-	.03
Hettinger	.2	1.1	.6	.1	-	-	-	-	-	-	.7
McHenry	3.6	8.5	4.6	2.7	.6	1.5	1.2	1.1	1.0	.01	2.5
McKenzie	.4	.7	.4	.6	-	-	.2	.9	.1	-	.5
McLean	1.2	3.1	3.7	1.5	.8	2.2	3.9	2.0	1.4	1.64	2.1
Mercer	.6	.3	1.3	.3	.2	.03	-	-	-	-	.4
Morton	-	-	-	.1	-	-	-	-	-	-	.1
Mountrail	3.7	3.8	1.5	.1	.2	.2	2.0	.4	3.3	.12	1.5
Oliver	.04	.2	1.5	.3	-	-	-	-	-	-	.5
Pierce	-	-	-	-	2.2	1.8	2.7	4.1	.1	.1	1.8
Renville	.04	.9	.9	.6	-	-	-	-	-	-	.6
Sheridan	-	-	-	-	2.3	1.6	4.1	5.4	.2	.36	2.3
Sioux	-	-	-	0	-	-	-	-	-	-	0
Slope	.3	1.4	0	.2	-	-	-	-	-	-	.5
Stark	.4	1.9	.3	.1	-	-	0	.04	.1	.1	.4
Ward	.4	1.4	1.5	.4	-	-	-	-	-	-	.9
Williams	<u>3.5</u>	<u>1.9</u>	<u>.7</u>	<u>.1</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>1.2</u>	<u>3.2</u>	<u>.8</u>	1.6
	1.4	2.7	1.3	.8	.7	.8	2.0	1.7	1.2	.51	

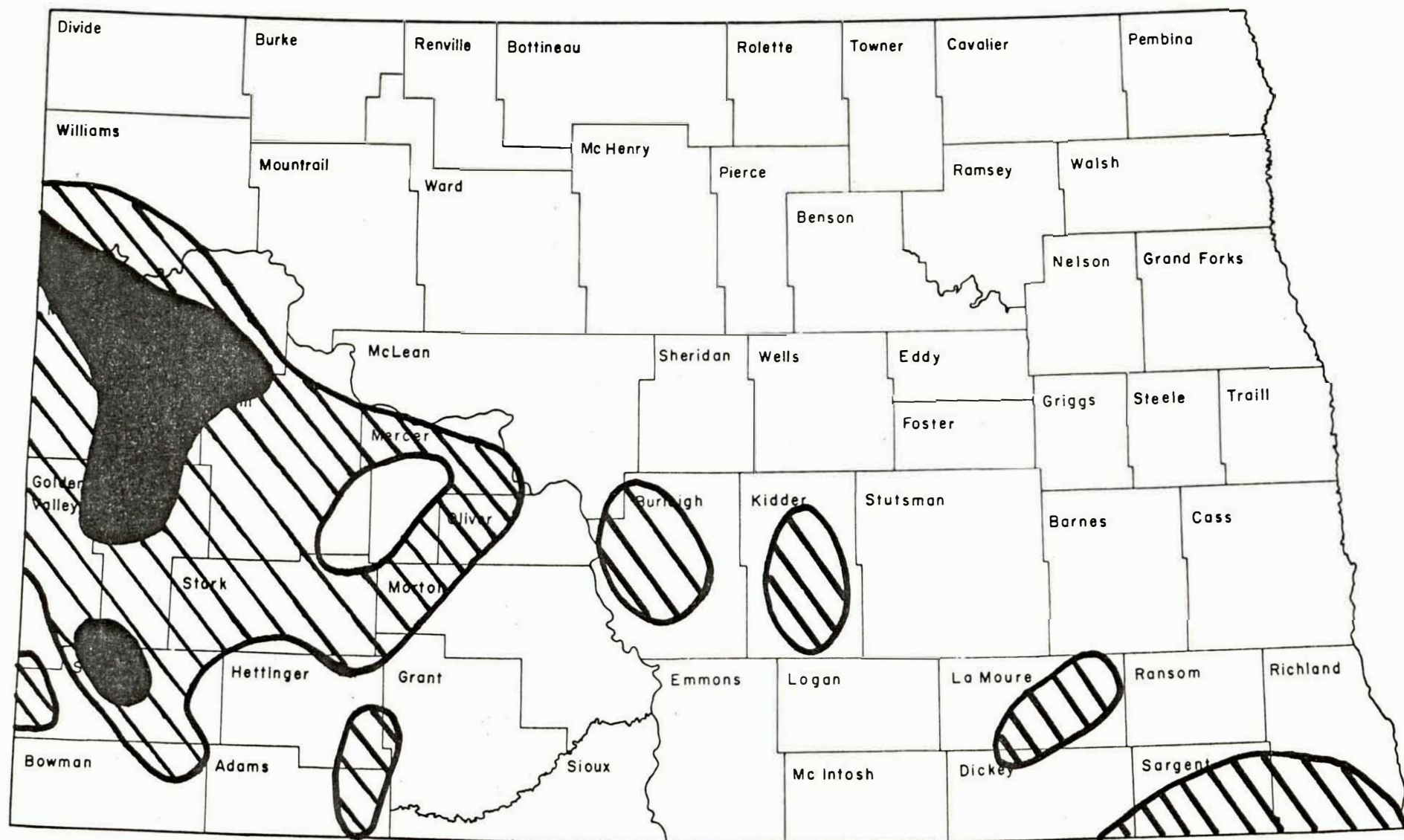
*C. G. Scholl*

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# ADULT GRASSHOPPER SURVEY

Fall 1975

North Dakota



SCALE 10 0 10 20 30 40 MILES



Non-economic to light  
0 to 3 per sq. yd.



Light to threatening  
3 to 7 per sq. yd.



Threatening to severe  
8 or more per sq. yd.

INCLUDES BOTH CROPLAND & RANGELAND

Prepared by: North Dakota Department of Agriculture and the USDA  
Animal and Plant Health Inspection Service